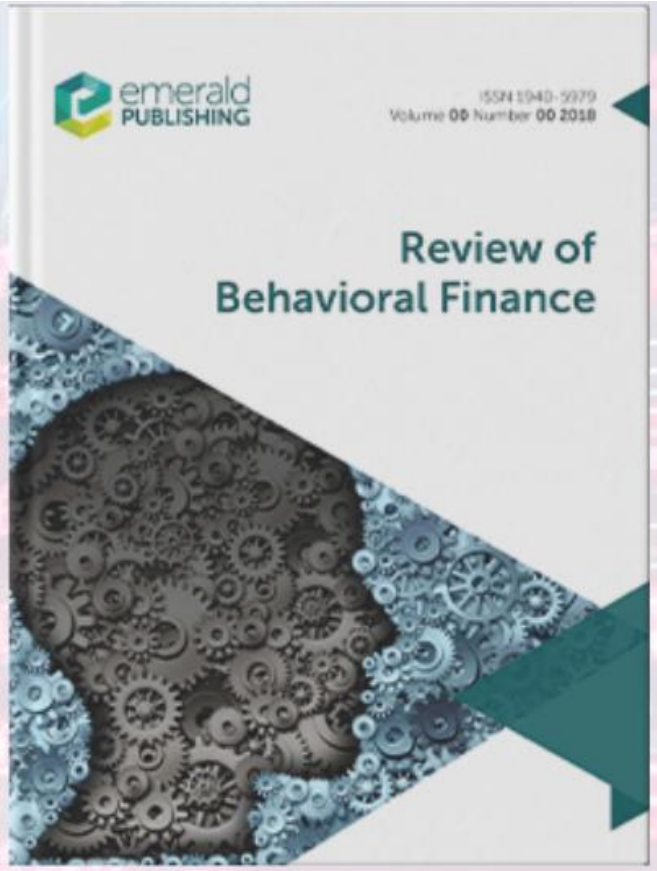

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Female workers' readiness for retirement planning: an evidence from Indonesia

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Abstract

Purpose – The purpose of this study is to examine the effects of demographical factors (age, education and income); psychological factors which are future time perspective (FTP) and financial risk tolerance (FRT); along with financial literacy on retirement planning among female workers in Indonesia.

Design/methodology/approach – This study applies a quantitative approach, where primary data was acquired through online surveys to 529 workers in various locations in Indonesia. After data cleaning, the final sample size was 304. The PLS-SEM technique was utilised to assess the structural model in the study.

Findings – The results of this study show that income affects an individual's perspective towards the future. Financial literacy is confirmed to have a direct effect on retirement planning activity. Furthermore, financial literacy appears to be a significant mediator between demographical factors and FTP in affecting retirement planning. An individual's acceptance towards risk is also affected by financial literacy.

Practical implications – The general public, especially female workers group who have no retirement funds, need to be educated on financial literacy. The government might need to encourage other parties and work together to financially educate the public, specifically regarding investments for retirement planning.

Originality/value – Most previous studies on retirement planning focused on demographical factors in general, and not specifically on a certain group. Filling the gap of existing studies, this study specifically discusses retirement planning done by female workers in Indonesia. Women's role as a workforce, with their psychological conditions and financial literacy, makes for an interesting topic to be studied further in terms of retirement planning.

Keywords Demographic factors, Future time perspective, Financial risk tolerance, Financial literacy, Female retirement planning

Paper type Research paper

Introduction

Retirement planning is an individual's behaviour that aims to prepare for life in retirement (Yeung and Zhou, 2017). It would enable individuals to have realistic expectations of changes that will be experienced during the transition (Taylor *et al.*, 2008) and set clear long-term goals for their post-retirement life (Topa *et al.*, 2009). Literature has indicated that in the retirement period, women are seen to be more vulnerable to financial distress than men. Although women have longer life expectancy than men, but they have a lower income (Almenberg and Dreber, 2015), lower financial literacy (Lusardi and Mitchell, 2008; van Rooij *et al.*, 2011a; Almenberg and Dreber, 2015) and lower risk tolerance (Al-Ajmi, 2008; Croson and Gneezy, 2009; Dohmen *et al.*, 2011; Almenberg and Dreber, 2015).

In the case of Indonesia, data from the Indonesian Women Coalition (2018) show that for a position in the same sector, women are paid 15–33% lower than men. A national survey undertaken by Financial Literacy and Inclusion in 2016 illustrated that the financial literacy index of women was lower than men in all of the provinces in Indonesia. The mean value of financial literacy index in men was 33.2% and 25.5% in women (Financial Services Authority, 2017). According to the Statistics Indonesia (2019), women's life expectancy is longer than men's (73.19 compared to 69.3 years old). Further, data from the National Survey of Social and Economy (2017) reveal that 53% of the residents in Indonesia are above 65 years old (senior), where senior women are 14% more likely to be impoverished compared to senior men. Senior women are more likely to be widowed (56%, compared to 15% for men) and more

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likely to live alone (15%, compared to 5% for men). At the same time, senior women tend to have lower work opportunities and a higher tendency to be dependent on their family to support their lives (76%, compared to 56% for men). In fact, retirement planning program has apparently been regulated by the government. In the Presidential Regulation of the Republic of Indonesia No. 109 of 2013 concerning the Stipulation of Participation in the Social Security Program, it is clearly stated that employers are obligated to provide social security for their employees. However, the implementation of employer-sponsored pension guarantee program is only obligatory for medium and large scale businesses. There are a large number of employees who have yet to receive a pension guarantee from their employers. On the other hand, for the self-employed there is no party who is obligated to secure their retirement, so it is very important for those without pension guarantee to have a good financial management and independently plan their retirement.

Stawski *et al.* (2007) describe steps that can be taken to prepare for retirement, such as gathering information and advice on life in retirement, designing a retirement plan whether with family or with professional help and preparing needed savings. According to the Financial Services Authority (2016), a source of self-financing for retirees can be savings saved in banks or other places, leasing or selling assets, capital market investments, real investments, insurance compensation and retirement benefits from retirement funds.

The importance of retirement planning drives the need for researches related to retirement planning. Financial literacy is a factor related to retirement planning that has received a lot of attention and has been proven significant in several studies. A person with a good financial literacy tends to do more retirement planning (Lusardi and Mitchell, 2008, 2011b; van Rooij *et al.*, 2011a) and can do better retirement planning (Robb and Woodyard, 2011; Hassan *et al.*, 2016; Lusardi *et al.*, 2017). From most studies of retirement planning associated with demographical factors, many ignored the influence of psychological factors (Aluodi and Njuguna, 2017). Hershey *et al.* (2007) state that although demographical factors influence retirement planning decisions, the effects are mediated through psychological factors on the decision to save.

Future time perspective (FTP) and financial risk tolerance (FRT) are psychological factors that are often associated with financial planning and retirement. FTP is a distinct tendency in individuals regarding thoughts about the future, namely, focus on opportunities or focus on limitations (Betts, 2013). FTP is associated with the tendency to plan and save for the future (Jacobs-Lawson and Hershey, 2005) whereas FRT refers to an individual's willingness to accept the risk of loss as a result of investing (Grable and Roszkowski, 2008). Which investment is chosen and how much is invested relies heavily on FRT, whether the investor tends to be a risk seeker or a risk averter (Grable and Joo, 1997).

This study was conducted to assess the relationship of demographics factors (age, education and income), psychological factors (FTP and FRT) and financial literacy towards retirement planning, especially in female workers in Indonesia, who do not obtain pension guarantees from employers. In a literature review conducted by Kumar *et al.* (2018), it was depicted that most of the studies on retirement planning were undertaken in developed countries such as the US and Australia. In addition, there are only a few studies that focus on the study of retirement planning behaviour specifically in women, such as Price (2002); Wong and Hardy (2009); Noone *et al.* (2010); Damman *et al.* (2014). Given its scarcity, this current study offers a better understanding about the underlying factors affecting retirement planning within the context of developing country like Indonesia.

Theory development and hypotheses

Theory of planned behaviour (TPB) is a theory introduced by Ajzen (1991). TPB has been widely applied in previous studies in various behavioural contexts, including behaviour in

financial decision making and retirement planning (Heenkenda, 2016; Cucinelli *et al.*, 2017; Nosi *et al.*, 2017; Ofili, 2017). According to TPB, a person is more likely to intend to follow a particular course of action if the behaviour leads to a specific outcome he deems worthy, if the person believes people think it is appropriate and if the person has the resource and opportunity to perform the behaviour. Someone who believes that behaviour can produce a positive outcome will have a positive attitude (Ajzen, 1991). Retirement planning is associated with higher post-retirement well-being. Wellness in retirement motivates a person to do retirement planning (Wang, 2007). In retirement planning, the resources and opportunities available greatly determine retirement planning, such as sufficient income and financial literacy, as well as the remaining time available to plan for retirement.

Influence of demographical factors on future time perspective

Different demographical factors will shape different views of the future. The results of Zacher and Frese (2011); Cate and John (2007) and Carstensen (2006) found that older people have a lower FTP. While Hershey *et al.* (2007) found there is no significant influence between age and FTP.

Kooij *et al.* (2017) found that higher education was associated with higher FTP (focus on opportunities). Several previous studies also found that higher FTP is associated with a higher level of education (Bortner and Hultsch, 1974; Rakowski, 1979; Glass and Kilpatrick, 1998). While Padawer *et al.* (2007) found a unique result on young female respondents, as their level of education was not related to FTP.

Padawer *et al.* (2007) found a higher level of FTP among individuals with higher income. Individuals with lower income have a limited resource that can be used for long-term planning and tends to have a higher focus on daily issues (money management), so their FTP will likely be lower (Hershey *et al.*, 2007).

H1a. Age has an influence on FTP.

H1b. Education has an influence on FTP.

H1c. Income has an influence on FTP.

Influence of demographical factors on financial risk tolerance

Demographical background plays a role in forming an individual's tolerance towards risk. Hallahan *et al.* (2004) and Grable *et al.* (2011) found that increasing age significantly affected the decline in FRT in a non-linear relationship. The decrease of FRT along with the increase of age is also found in the studies of (Al-Ajmi, 2008; Faff *et al.*, 2008; Sultana, 2010; Dohmen *et al.*, 2011). However, several studies found no significant effect of age on FRT (Grable, 1997; Grable and Joo, 1997; Wang and Hanna, 1998).

It is generally assumed that people with a higher level of education have a better ability to assess risk and return of investment (van Rooij *et al.*, 2011a). Other studies have also found that an increase in educational level is associated with a significant increase in FRT levels (Grable and Lytton, 1999a, b; Hallahan *et al.*, 2004; Al-Ajmi, 2008; Grable *et al.*, 2011), while the study of Faff *et al.* (2011) found a unique result where the level of education was not found to be a significant distinguishing variable in explaining FRT in women.

Individuals with a higher income tend to have a higher tolerance for risk (Kannadhasan, 2015). Individuals with a high income have a larger stream of income, thus feeling more capable of dealing with the possibility of loss and make them more willing to accept a higher level of investment risk (Dulebohn, 2002). Other studies (Grable and Lytton, 1999a, b; Barber and Odean, 2000; Hallahan *et al.*, 2004; Al-Ajmi, 2008); (Grable and Lytton, 1999a, b;

Hallahan *et al.*, 2004; Al-Ajmi, 2008) also showed that an increase in income is associated with a significant increase in FRT levels.

H2a. Age has an influence on FRT.

H2b. Education has an influence on FRT.

H2c. Income has an influence on FRT.

Influence of demographical factors on financial literacy

Demographical background plays a role in forming a person's financial understanding and financial ability. The study of van Rooij *et al.* (2012) found that age significantly affects financial literacy because as age increases, so does the amount of experience and information about finance (Ebiringa and Okorafor, 2010).

Scheresberg (2013) found that the level of education significantly affects financial literacy. However, education is not a guarantee of financial literacy. There is a significant difference in financial literacy, especially in accounting, between individuals with higher education and lower education (Christelis *et al.*, 2010).

Van Rooij *et al.* (2012) and Scheresberg (2013) found that income significantly affects financial literacy. Moreover, Hershey *et al.* (2007) found that income has a significant influence on FTP, financial literacy and the tendency to plan and save.

H3a. Age has an influence on financial literacy.

H3b. Education has an influence on financial literacy.

H3c. Income has an influence on financial literacy.

Influence of future time perspective on financial literacy

Individuals who have a high FTP will think they have great opportunities in the future and strive to achieve their goals by developing and enhancing current skills (Simons *et al.*, 2004; Carstensen, 2006), including their knowledge of finance to learn how to support themselves in retirement (Hershey *et al.*, 2007).

H4. FTP has an influence on financial literacy.

Influence of financial literacy on financial risk tolerance

Christelis *et al.* (2010); van Rooij *et al.* (2011b), and Yoong (2011) showed that there is a positive and significant effect of financial literacy level and cognitive capabilities on the decision to invest in stocks. Lack of financial knowledge may explain low investment levels and low participation in the capital market. Clark *et al.* (2014) further found that people with greater knowledge of financial products and investments tend to invest their retirement savings in high risk, high-return products.

H5. Financial literacy has an influence on FRT.

Influence of future time perspective on retirement planning

FTP is associated with the tendency to plan and save for the future (Jacobs-Lawson and Hershey, 2005) and affects the decision to plan for retirement (Parker *et al.*, 2013). Howlett *et al.* (2008) also expressed a similar statement that a person with higher FTP is more likely to plan for retirement than a person with lower FTP. However, with no financial literacy, FTP does not affect the possibility of participating in retirement planning.

H6. FTP has an influence on retirement planning.

Influence of financial risk tolerance on retirement planning

Yuh and DeVaney (1996) found that retirement planning on individuals with a high FRT is more likely to be bigger than individuals who avert risks. Later, Jacobs-Lawson and Hershey (2005) found that individuals who have a high tolerance towards risk prefer to invest in high-risk investments such as stocks, while those who avert risks prefer to invest in bonds and certificates of deposits. Similar findings also emerged from several studies that focused on retirement investments (Sundén and Surette, 1998; Bajtelsmit *et al.*, 1999; Hariharan *et al.*, 2000).

H7. FRT has an influence on retirement planning.

Influence of financial literacy on retirement planning

Retirement planning is a very complex matter and requires a certain degree of financial knowledge. The studies of Lusardi and Mitchell (2011) and van Rooij *et al.* (2011a) showed that a person with good financial literacy is more likely to do retirement planning. Also, individuals with good financial literacy are able to plan their retirement better (Hassan *et al.*, 2016) and be more confident in facing retirement (Robb and Woodyard, 2011).

H8. Financial literacy has an influence on retirement planning.

The research model used in this study is an adaption of the research model of Kumar *et al.* (2018) and can be seen in Figure 1.

Methodology

The type of research used in this study is causal research. Causal research is used to prove the relationship between the cause and effect of several variables. In analysing the data in this study, we used the PLS-SEM approach instead of the CB-SEM approach because the PLS-SEM is more appropriate for causal-predictive analysis with a high enough complexity on the relationship between the variables (Rigdon, 2012, 214). The population under study is the female workforce in Indonesia. The sum of the female workforce in Indonesia is obtained from the data on the state of the labour force in Indonesia from Statistics Indonesia in February

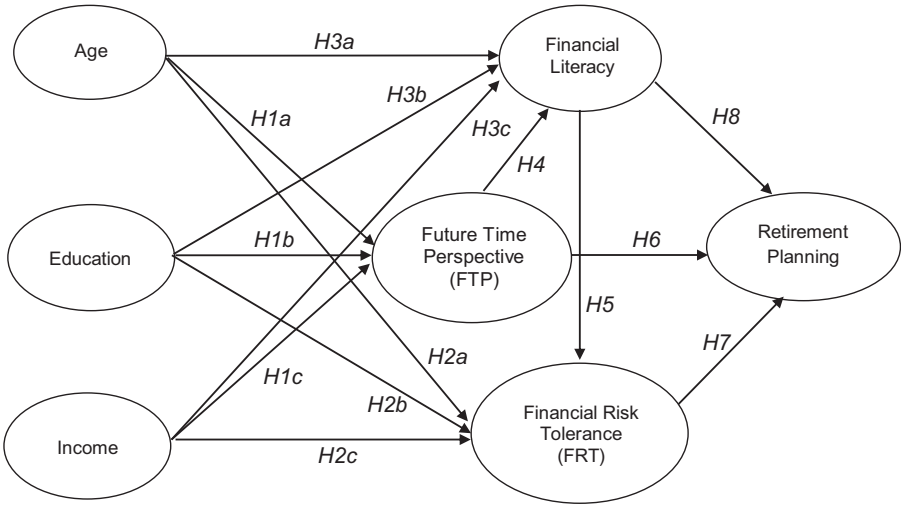

Figure 1.
Research model

Source(s): Adapted from Kumar *et al.*, 2018

2019. The data are the number of female residents aged 15 years and above, which comprises the workforce, totalling 52,045,163 (Statistics Indonesia). Criteria for the sample selected areas follows:

(1) Gender is female and is at the age of 15 years and above.

(2) Currently working in Indonesia as a laborer/worker/employee, professional or self-employed.

(3) Does not get a pension guarantee from the employer, regardless of not having retirement funds or has retirement funds from personal initiative.

Primary data collection was conducted through a survey with a questionnaire as the research instrument. The questionnaire was created using Google form platform to make it accessible online and to reach a wider audience. The questionnaire consisted of five sections. The first section measured respondents' demographics profiles asking questions of: age, education, monthly average net income, city of residence and retirement fund ownership. The second section measured respondents' financial literacy, which consisted of 17 items of multiple-choice questions adapted from Chen and Volpe (1998). It consisted of general knowledge, saving and borrowing, insurance and investment. The third section measured respondents' FTP, which contained 10 items adopted from Carstensen and Lang (1996). The fourth section measured respondents' FRT, which contained 5 items adopted from Jacobs-Lawson and Hershey (2005). The last section measured respondents' retirement planning activity, which contained 12 items adapted from Stawski *et al.* (2007). A 7-point Likert Scale was selected to measure FTP, FRT and retirement planning concepts, ranging from 1 = strongly disagree to 7 = strongly agree. The PLS-SEM technique was utilised to assess the structural model, confirming the relationships between examined concepts in the research model and to test the hypotheses.

Results

Online survey was completed within one and half months. A total of 529 responses were received and after data cleaning process, 304 questionnaires met the criteria and were analysed further.

Table 1 shows that most of the respondents are still relatively young, aged 20–30 years (62.17%) and have completed their last education up to a high level of undergraduate (60.9%)

		Retirement fund						
		No	Yes	Total	Mean	SD	Min	Max
Age (years old)	20–30	143	46	189	32.247	9.650	20	64
	>30–45	53	23	76				
	>45–55	15	13	28				
	>55	7	4	11				
Education / Duration of study (years)	Elementary	4	0	4	15.145	2.169	6	18
	Junior high	6	1	7				
	Senior high	32	16	48				
	Diploma	28	5	33				
	Undergraduate	134	51	185				
	Postgraduate	14	13	27				
Income (IDR in million)	<5	89	7	96	10.283	14.943	1	150
	5–10	106	43	149				
	>10–20	17	18	35				
	>20–30	3	6	9				
	>30–40	1	2	3				
	>40–50	1	4	5				
	>50	1	6	7				

Table 1. Retirement fund ownership based on age, education, income

and have a relatively low net income of 5–10m (49.01%) and under (31.58%) per month. Most of the respondents (71.71%) do not have a retirement fund from personal initiative. Those with the least personally-initiated retirement funding are the respondents aged 20–30 years (24.34%). While the respondents with the most personally-initiated retirement funding are the respondents aged 45–55 years, with a postgraduate education level and an income of more than 10m per month.

The average respondents in this study are 32.25 years old, who underwent study for 15.15 years and have a net income of IDR 10.28m. The youngest respondent is 20 years old, while the oldest is 6 4 years old. The shortest duration of study is 6 years (thus elementary school graduate) and the longest is 18 years (postgraduate). The lowest net income is IDR 1m per month and the highest is IDR 150m per month.

From Table 2, it is known that the average respondent strongly agrees that many opportunities are waiting ahead and hopes to set new goals in the future. It appears the

Variable	Indicator	Mean	SD	Min	Max
Future time perspective	Belief of the abundance of opportunities ahead (FTP1)	*5.826*	1.254	1	7
	Hope to set many new goals in the future (FTP2)	*5.816*	1.138	2	7
	Belief of a lot of possibilities ahead (FTP3)	5.737	1.168	2	7
	Belief in having a long-spanning future (FTP4)	5.599	1.191	1	7
	Belief of having an unlimited future (FTP5)	5.526	1.200	3	7
	Belief of being able to do anything in the future (FTP6)	5.385	1.282	1	7
	Belief of plenty of time left to make new plans (FTP7)	5.444	1.218	3	7
	Belief of time is running out (FTP8)	*5.355*	1.206	2	7
	Belief of there is a limited possibility in the future (FTP9)	5.368	1.154	2	7
	Feeling as we get older, time is running out (FTP10)	*5.260*	1.083	2	7
Financial risk tolerance	Willingness to risk financial loss (FRT1)	3.878	1.396	1	7
	Prefers high-return investments although risky (FRT2)	3.809	1.510	1	7
	Feels the overall potential growth of retirement investments outweighs investment risk level (FRT3)	*4.016*	1.199	1	7
	Willing to invest in risky investments to ensure financial stability in retirement (FRT4)	3.789	1.606	1	7
	Will never choose the safest investment when planning for retiremet (FRT5)	*3.727*	1.539	1	7
Retirement planning	Read articles/brochures on investments/financial planning frequently (PP1)	3.730	1.504	1	7
	Read one/more books on investment/financial planning (PP2)	3.457	1.471	1	7
	Visit financial planning sites often through the Internet (PP3)	3.441	1.574	1	7
	Collect/manage financial records (PP4)	*4.079*	1.362	1	7
	Perform a comprehensive assessment of net wealth (PP5)	3.987	1.522	1	7
	Identify specific spending plans for the future (PP6)	4.039	1.290	1	7
	Discuss retirement plans with knowledgeable acquaintances (PP7)	3.911	1.512	1	7
	Have a savings account in bank/other places specifically for retirement (PP8)	4.076	1.570	1	7
	Own an asset or property that is specifically for rent/sale for retirement (PP9)	3.648	1.534	1	7
	Invest in capital market (stocks/mutual funds/bonds) specifically for retirement (PP10)	*3.391*	1.463	1	7
	Own an insurance claimable after a certain age (retirement) (PP11)	3.638	1.560	1	7
	Own an inheritance that can be a source of income in retirement (PP12)	3.628	1.722	1	7

Table 2.
Description of respondents' future time perspective, financial risk tolerance and retirement planning

average FTP of the respondents is quite high (5.260–5.826). Table 2 also gives the information that the average respondent tends to choose safe investments or minimal-risk investments. It appears that respondents' FRT is quite low (3.727–4.016). Table 2 shows that most respondents' retirement planning activities include collecting or managing financial records, identifying specific future spending plans, as well as preparing retirement funds in the form of savings. On the other hand, the retirement planning activities with the least number of participants include gathering information on investments and financial planning, both by reading books and visiting financial planning websites online and investing in the capital market (stocks/mutual funds/bonds). It is shown that the average level of retirement planning activity done by respondents is relatively low (3.391–4.079).

Based on Table 3, it is known that most respondents have low financial literacy rate (55.59%). Then, the percentage of correct answers for each question and each section is calculated to find out what the average respondent understands and does not understand.

Table 4 provides information that the average percentage of the highest correct answer is on general knowledge indicator (62.63%), while the average percentage of the highest

Correct answer (%)	Level of financial literacy	Frequency	%
< 60%	Medium	169	55.592%
60–79%	Low	131	43.092%
≥ 79%	High	4	1.316%
Total		304	100.000%

Table 3.
Respondents' financial literacy level

Indicator	Correct answer (%)
General Knowledge (LK1)	
Benefits of personal financial knowledge	73.026
Knowledge of personal financial planning	64.474
Knowledge of asset liquidity	53.289
Knowledge of net asset	55.592
Knowledge of income and expenditure	66.776
Mean	*62.632*
Saving and Borrowing (LK2)	
Compound interest calculation	54.934
Knowledge of deposit duration	72.368
Knowledge of credit cards	53.289
Knowledge of financial institutions	69.079
Mean	*62.418*
Insurance (LK3)	
Knowledge of insurance premium	65.789
Knowledge of vehicle insurance premium	54.605
Knowledge of health insurance	71.711
Knowledge of life insurance	53.947
Mean	*61.513*
Investment (LK4)	
General knowledge of investment asset	63.816
Knowledge of interest rates and bonds prices	45.724
Knowledge of investment risk choices	51.316
Knowledge of mutual funds	70.395
Mean	*57.813*
Note(s): Average of overall financial literacy with $n = 304$ respondents: *61.184%*	

Table 4.
Percentage of correct answers from financial literacy questions

incorrect answer is on investment indicator (57.81%). This result shows that general knowledge is the most understood and investment is the least by the average respondent (see Table 4).

The outer model analysis as seen in Figure 2 was performed to ensure that the measurements used were valid and reliable. After eliminating one indicator with the lowest outer loading (PP12), all indicators had a value of outer loading > 0.6. It can be said that all the indicators met the criteria of convergent validity.

All the cross-loading value of indicators on the variables was also greater than the cross-loading on other variables, thus meeting the criteria of discriminant validity. As seen in Table 5, all indicators in each study variable also met the criteria for composite reliability, AVE and Cronbach alpha, as they had > 0.7 for composite reliability, > 0.5 for AVE and > 0.6 for Cronbach alpha.

The result of the outer model analysis above was then followed by analysing the inner model which aimed to evaluate the structural model and see the significance of the causal relationship between latent variables. The inner model analysis included coefficient of determination analysis (R^2), predictive relevance (Q^2) and goodness of fit (GoF) index. The coefficient of determination describes how much the endogenous variable is described by its exogenous variable. The *R*-square value of the retirement planning variable was 0.781, which meant that it could be explained by demographical, psychographical and financial literacy by 78.1%, while the rest was explained by other variables excluded in the examined model. Q-square predictive relevance analysis measures how well the observed values are generated by the model. In this study, the *Q*-square value obtained was 0.881, meaning that the model has an adequate predictive relevance value. The GoF index result obtained was 0.485, which means that overall the structural model has a large GoF index (≥ 0.360).

Hypothesis testing was then performed, as well as indirect effects relationship analysis to determine the relationship flow of the factors was studied. Table 6 shows the results obtained from direct effects and indirect effects of relationship analysis:

Discussion

The results of this study have revealed that between the three demographics factors analysed in this study, only income significantly affects the FTP. In other words, the higher a person's income, his perspective of the future will also be higher (focus on opportunities). This is because a high-income person has the resources to support the growth of confidence in future opportunities. On the other hand, a low-income person has limited resources and is more likely to highly focus on everyday financial issues (Hershey *et al.*, 2007). Referring to the theory of planned behaviour (TPB), a person is more likely to intend to follow a specific course of action if they feel they have the resources and opportunity needed to perform said behaviour (Ajzen, 1991). In the context of retirement planning, resources and opportunity, an individual has will also greatly determine retirement planning activity, such as financial resources (income) to support the retirement fund investment and the time left to prepare for retirement. Good financial resources will support a person to have a higher FTP (Hershey *et al.*, 2007; Padawer *et al.*, 2007) and plan his retirement (Grable and Joo, 1997; Hershey *et al.*, 2003).

Moreover, the results confirm that age, education and income significantly affects financial literacy. That is, the older a person, the higher education level, and the higher the income would lead to a better financial literacy. When a person gets older, he/she would tend to have more experiences and know more information on financial issues (Ebiringa and Okorafor, 2010). The higher the education level attained, the more knowledge of a person would have, including knowledge of finance. In relation to financial knowledge, van Rooij *et al.* (2011a) argue that highly educated people would tend to have a better financial

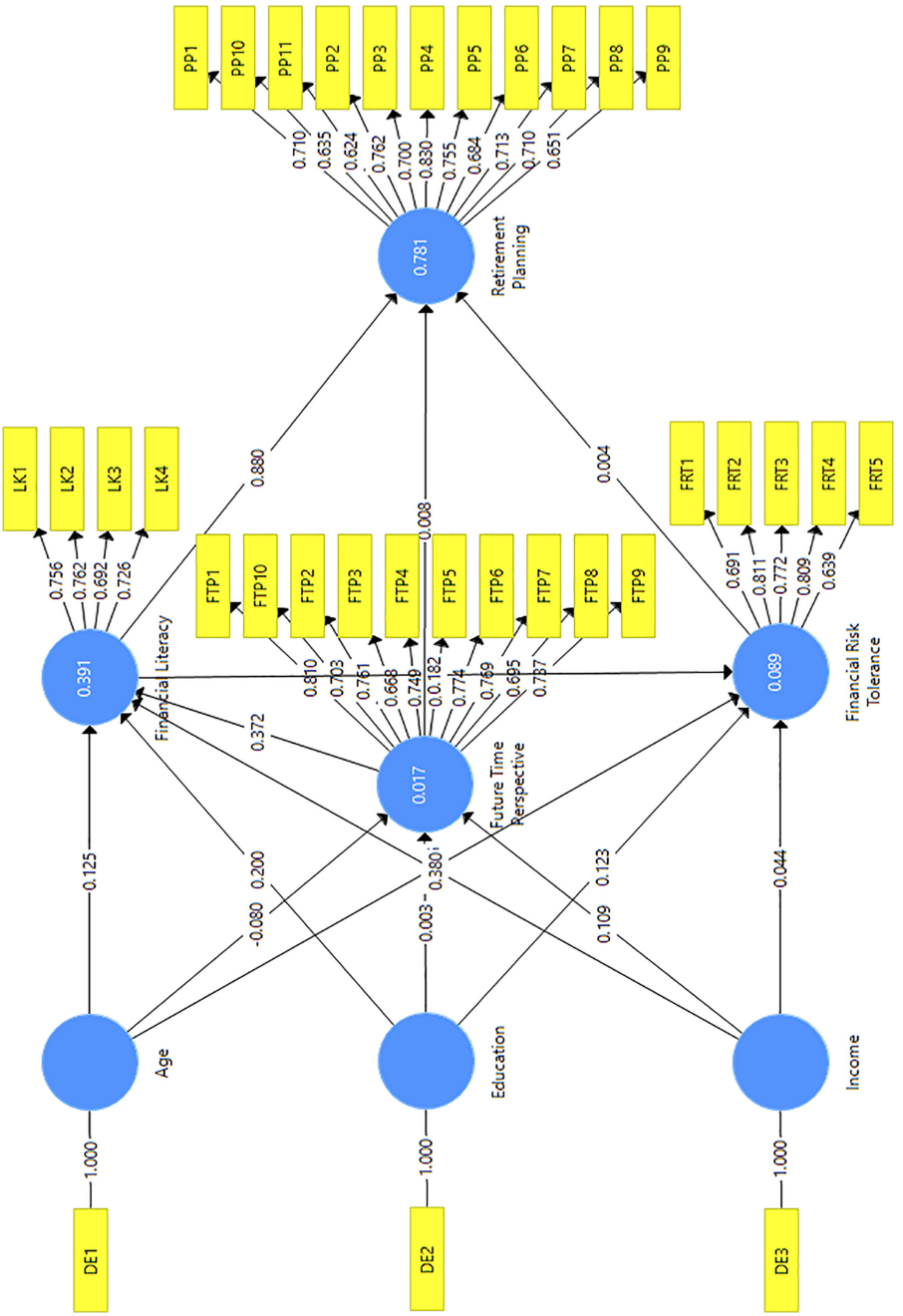

Figure 2.
Path diagram and outer model values

capability to evaluate risk and return on investment than low-educated people. Further, individuals with a high income, in general, have more unrestricted access to financial service facilities and media of information providers on financial planning and investments, so individuals with a high income have more experience and knowledge in finance than individuals with a low income.

Moreover, age, education and income appear to indirectly influence respondents' planning towards retirement as mediated by financial literacy level. That is, an individual whose age, education and income are higher tend to have a better financial literacy, which in turn, increase the likelihood to plan for her or his retirement (Lusardi and Mitchell, 2008, 2011b; van Rooij *et al.*, 2011a), even he or she is able to plan retirement in a better way (Robb and Woodyard, 2011; Hassan *et al.*, 2016; Lusardi *et al.*, 2017). As explained by Ajzen (1991) in TPB theory, a person is more likely to follow a specific course of action if said behaviour leads to a certain desired results. A person who is sure that his or her behaviour results in a positive outcome would have a positive attitude (Ajzen, 2005) . It is therefore could be concluded that a person whose financial literacy is good, he/she would realize the importance of retirement planning for his well-being in retirement. As stated by Wang (2007), wellness in retirement motivates a person to plan for his retirement.

Table 5.
Outer loading analysis based on composite reliability, AVE and cronbach alpha

Variable	Composite reliability	AVE	Cronbach alpha
Age	1.000	1.000	1.000
Education	1.000	1.000	1.000
Income	1.000	1.000	1.000
FTP	0.925	0.552	0.910
FRT	0.863	0.552	0.802
Financial literacy	0.824	0.539	0.715
Retirement planning	0.917	0.503	0.900

Table 6.
Path Coefficients and *t*-statistic direct and indirect effects relationship

Relationship		Path coefficients	*t*-statistic
Direct effects	Age → FTP	−0.080	1.138
	Education → FTP	0.003	0.041
	Income → FTP	0.109	2.132*
	Age → FRT	−0.115	1.804
	Education → FRT	0.124	1.717
	Income → FRT	0.043	0.691
	Age → Financial literacy	0.125	2.268*
	Education → Financial literacy	0.200	3.241*
	Income → Financial literacy	0.380	8.671*
	FTP → Financial literacy	0.372	8.603*
	Financial literacy → FRT	0.182	2.718*
	FTP → Retirement planning	0.012	0.375
	FRT → Retirement planning	0.007	0.263
	Financial literacy → Retirement planning	0.891	46.005*
Indirect effects	Income → FTP → Financial Literacy	0.041	2.050*
	Age → Financial literacy → Retirement planning	0.111	2.245*
	Education → Financial literacy → Retirement planning	0.178	3.209*
	Income → Financial literacy → Retirement planning	0.338	8.462*
	FTP → Financial literacy → Retirement planning	0.331	8.264*
	Income → FTP → Financial literacy → Retirement planning	0.036	2.039*

Note(s): significant at * *t*-statistic ≥ 1.960

The results of this study also confirm that of three demographics attributes, only income that indirectly influence respondents' retirement planning through FTP and financial literacy (Table 6). As stated by Hershey *et al.* (2007), a high-income person would have sufficient resources to drive the confidence of future opportunities, while a person with such a confidence would be more likely to strive to achieve his or her goal by developing and enhancing the knowledge (Simons *et al.*, 2004), including knowledge on finance and how to support himself in retirement (Hershey *et al.*, 2007). Thus, the higher an individual's focus on opportunities (FTP), the higher the financial literacy he/she has. Moreover, with good financial literacy, because of the extra effort to improve financial knowledge from someone with a high FTP, retirement planning is more likely to be done (Lusardi and Mitchell, 2008, 2011b; van Rooij *et al.*, 2011a) and can be performed better (Robb and Woodyard, 2011; Hassan *et al.*, 2016; Lusardi *et al.*, 2017).

The role of financial literacy is very crucial to mediate the impact of FTP on retirement planning. That is, although individuals who highly focus on opportunities (FTP) are more likely to plan for their retirement, without proper financial literacy, such focus on opportunities (FTP) would not drive the eagerness to prepare for the retirement planning (Howlett *et al.*, 2008). The findings of this current study show that half of total respondents agreed that there were many opportunities in the future, thus, respondents hoped for setting new goals. This shows that the average respondent has a high FTP level. Nevertheless, respondents' retirement planning activity showed that most respondents had low retirement planning activities. In this study, financial literacy rate was measured by adopting Chen and Volpe's (1998) measurement scale. The measurement showed that most respondents in this study had low financial literacy rate. The low retirement planning of the respondents may be due to their low financial literacy rate. In fact, despite having a high income and feeling they have many opportunities in the future, a person with low financial literacy does not realize the importance of retirement planning for his well-being in retirement and lacks sufficient knowledge to plan for retirement, thus, is more likely to not plan for retirement.

With regard to the retirement planning activity, the findings showed that respondents tended to set up retirement funds in the form of savings deposited in banks or elsewhere although savings yield a very low return and do not exceed inflation. Investing in the capital market (stocks/mutual funds/bonds) is one of the investments that can be an option in preparing for retirement funds. However, it is also known that investing in the capital market is a retirement planning activity that many respondents have not done. Based on the measurements of financial literacy, it appeared that investment-related financial knowledge was the least understood financial product. Suboptimal retirement planning from respondents may be due to the low financial literacy of the respondents, particularly in relation to investment. With good financial literacy, respondents should be able to choose the most appropriate investment means to set up retirement funds, which count as long-term financial planning.

In addition, the low financial literacy rate of respondents also significantly influences their level of risk acceptance. With higher financial literacy, a person's acceptance of risks will also be higher. With good financial literacy, a person will have a good understanding of risks and investments and adjust accordingly in making investment decisions, including investments with relatively high risk such as the capital market (Yoong, 2011). On the contrary, with low financial literacy, a person will not have a good understanding of risks and investments and will be more likely to have low acceptance of risk. Based on the analysis of respondents' FRT, it is known that the average respondent has a low level of acceptance towards risks. Respondents tend to choose safe investments or investments with minimum risk of loss. The low level of risk acceptance of the respondents can also be a reason why respondents choose savings that have low risk, despite providing very low returns.

The results of this study have revealed that financial literacy is a crucial factor in determining retirement planning. Based on this study's hypothesis testing, it is known that only financial literacy has a significant impact on direct effects relationship towards retirement planning. With higher financial literacy, retirement planning activity will also be higher. A person with high financial literacy will be more likely to plan for retirement (Lusardi and Mitchell, 2008, 2011b; van Rooij *et al.*, 2011a) and will be able to plan better (Robb and Woodyard, 2011; Hassan *et al.*, 2016; Lusardi *et al.*, 2017). The significance of financial literacy towards retirement planning is also supported by other studies conducted previously (Lusardi and Mitchell, 2008, 2011a; Robb and Woodyard, 2011; van Rooij *et al.*, 2011a, b; Scheresberg, 2013; Hassan *et al.*, 2016; Lusardi *et al.*, 2017).

Low financial literacy rate and retirement planning activity in investments in most of the respondents may be associated with respondents' age and income level. Most of the respondents are young aged group with low income. According to Suhartono and Qudsi (2009), people aged between 20 and 30 have just started working, needing the cost of wedding preparation or getting their first home. Most of the income of people in this age group is generally spent on consumption rather than investment. People with limited income have insufficient resources to plan their finance for the long term and likely to highly focus on daily financial issues (Hershey *et al.*, 2007). Young people are also less likely to have high financial literacy (Dulebohn, 2002), as they have little to no experience and information on financial issues (Ebiringa and Okorafor, 2010). Moreover, young people generally tend to not feel the need to start planning for their retirement. It should be best to start retirement planning from a young age because the sooner they invest, the longer the investment duration will be, and the accumulated funds will be more significant. By preparing early, a person will have more available financial instrument alternatives, easier financial management and be better at managing risks to get higher returns.

Conclusions and recommendations

The purpose of this study was to explore female workers' readiness in preparing their retirement, in which the effects of demographical, psychological factors and financial literacy on retirement planning were examined and tested. This study contributes to the existing personal finance literature, first, by providing a novel insight about retirement planning issue and its challenges from the perspective of a specific group of female workers in a developing country like Indonesia. Second, by offering a more comprehensive investigation by encompassing the presence of psychological factors of future time perspective and financial risk tolerance as mediating variables, given the scarce examination on these factors in previous studies.

The results of this study have confirmed the significant role of financial literacy, both directly, and indirectly in influencing the retirement planning among female workers. In indirect way, financial literacy was proven to mediate how workers' age, education and income level significantly influenced the group to prepare for their retirement. Financial literacy also appeared to be a significant mediating variable of how future time perspective affected pension plan. Meanwhile, income was the only demographical attribute which significantly affected future time perspective. That is, income would determine female workers be more optimistic about their future, and therefore set a plan for their pension plan.

The findings of this study have important implications for government and financial service institutions. First, although financial literacy was found to play an essential role in influencing retirement planning intention, the finding showed that financial literacy rate of female workers was considered low. Having said this, female workers need to receive an adequate support programs aiming to enhance the financial literacy rate of the group. Such programs could be held by the relevant institutions for instances public financial and

educational institutions. Training programs ranging from basic knowledge such as the importance of pension plan preparation to more advanced training about various financial products such as savings, investment (stocks, bonds and mutual funds) and asset products (gold and houses). Second, the government needs to work together with other financial institutions such as bankings, employees' social security system and other pension plan financial institutions to provide financial education programs for lower-middle workers.

The significant roles of demographical and psychological factors shown in this study offer an opportunity for applying different research approach to get deeper insights from the female workers. Further research, therefore, is recommended to apply qualitative research to portray the underlying factors affecting retirement planning from the subjective and interpretative viewpoints of the participants. Besides, demographical factors such as family structure, marital status and ethnicity; and psychological factors such as retirement goal clarity and locus of control and attitude towards retirement would offer appealing findings to be revealed.

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